



# **Winter Driving Safety**



# Topics



- **Hazards of winter driving**
- **Prepare for your trip**
- **Driving in ice and snow**
- **Winter automobile emergency kit**
- **What to do if your tires begin to slide**
- **Snowplow safety**
- **Conclusion**





# Hazards of Winter Driving



- **Slick roadway**
- **Increased chance of skidding**
- **Increased stopping distance**
- **Reduced visibility**
- **Dirt, salt and sand on windshield**
- **Slower traffic**
- **Potential for hypothermia if stranded**



# Typical Mistakes When Driving in Winter



“Overdriving”:

- Driving too fast
- Not leaving enough space between vehicles
- Braking too hard
- Making sudden changes of lane

Travel too slow -- The car doesn't have enough momentum to be able to push through heavier snow without getting stuck.



# ***Are You Ready for Winter Driving?***



- ***Be prepared!*** Before leaving home, find out about the driving conditions.

- Snow later in day?
- Temp dip below freezing?

Safe drivers know the weather, and their limits. If the weather is bad remember, ***Ice and Snow, Take it Slow***, or just don't go.



# ***Are You Ready for Winter Driving?***



**Clear:** Remove any snow on your vehicle's windows, lights, brake lights and signals.

- Make sure you can see and be seen.
- Don't forget the hood, roof, and your head and taillights.
- Leftover ice chunks from the roof or hood of the vehicle may become hazardous to yourself and those on the road around you while driving.



# ***Are You Ready for Winter Driving?***



- **Inspect:** Check your vehicle's tires, wiper blades, fluids, lights, belts and hoses.
  - Battery/ Spark Plugs,
  - antifreeze level,
  - thermostat,
  - heater,
  - brakes,
  - defroster.



# ***Are You Ready for Winter Driving?***



- **Time:** Leave plenty of time to reach your destination safely. It's not worth putting yourself and others in a dangerous situation just to be on time.
- **Gas Tank:** At least half full throughout the winter.
  - Reduce condensation, making your vehicle easier to start on cold mornings.
- **Cell phone:** Ensure it is charged and bring it with you.
  - Car charger for the phone good idea





# ***Are You Ready for Winter Driving?***



- Rear-wheel drive vehicles,
  - Keep a small bag of sand in your trunk
  - Creates traction under the tires if you get stuck.
  - Heavy front end and light back end of vehicles might make the car prone to slide



# ***Are You Ready for Winter Driving?***



- Road salt:
  - Commonly used during winter can damage your car's paint.
  - Rinsing it off every once in a while
  - A good wash and coat of fresh wax will go a long way in preventing corrosion and keep your vehicle looking like new.



# ***Are You Ready for Winter Driving?***





# Winterize your vehicle



- VEHICLE LIGHTS: Front and rear lights are operational, especially the car's flashing hazard lights.
- CAR FLUIDS :
  - Windshield wiper fluid may freeze.
    - Instead of toughing it out until spring, exchange the fluid with one made especially to spray in freezing conditions.
    - Carry a spare gallon of washer fluid in your trunk.



# Winterize your vehicle



- CAR FLUIDS, cont.:
  - Motor oil to a lighter weight oil
    - Engine a little easier to turn over during cold weather.
  - Anti-Freeze
    - They sell testers in automotive stores (looks like a rather large eye dropper)
    - This will tell you at what temperature your antifreeze will freeze;
    - drain some coolant from the radiator to increase percentage of Anti-Freeze if you need to.



**A key to driving safety in  
the winter is to make sure your  
wiper blades are in good shape.**



# Winterize your vehicle



- **WIPER BLADES:** Winter wiper blades cut through snow and ice instead of using regular ones throughout the year.
  - Spray nozzles of your windshield-washer system.
  - Sometimes, they get blocked by wax or debris.
  - Use a needle or pin to clear blocked nozzles.
- **BELTS AND HOSES:**
  - Look for signs of wear or cracking,
  - Replace any that do not look to be in good condition.



# Winterize your vehicle



**TIRES:** Adequate tread? Properly inflated?

- If worn, replace them.
- Snow tire treads
  - provide better traction
  - equipped to handle extreme winter driving conditions.
- Underinflation can reduce the gripping action of tires because the tread will not meet the road surface as it was designed to do.
  - Overinflation has the same effect.



# Driving safely on icy roads

- Decrease your speed and leave yourself plenty of room to stop.
  - You should allow at least three times more space than usual between you and the car in front of you.
- Brake gently to avoid skidding.
  - If your wheels start to lock up, ease off the brake.
- Turn on your lights
  - Increase your visibility to other motorists.
  - Keep your lights and windshield clean.

# Driving safely on icy roads

- Use low gears to keep traction, especially on hills.
- Don't use cruise control or overdrive on icy roads.
- Be especially careful on bridges, overpasses and infrequently traveled roads, which will freeze first.
  - Even at temperatures above freezing, if the conditions are wet, you might encounter ice in shady areas or on exposed roadways like bridges.
- Don't assume your vehicle can handle all conditions.
  - Even four-wheel and front-wheel drive vehicles can encounter trouble on winter roads.

# Driving safely on icy roads

- When driving in winter weather, watch out! Mother Nature has some tricks up her sleeve in the winter. Here are some to be on the look out for:
  - **First Snow or Ice:** Drivers often aren't prepared for winter driving and forget to take it slow. Remember to drive well below the posted speed limit and leave plenty of room between cars.
  - **Black Ice:** Roads that seem dry may actually be slippery – and dangerous. Take it slow when approaching intersections, off-ramps, bridges or shady areas – all are hot spots for black ice. Remember, ***Ice and Snow, Take it Slow.***

# Driving safely on icy roads

- **Limited Visibility:** Stay attentive and reduce speed. Know what's going on around you.
- **Four-Wheel Drive:** On snow and ice, go slowly, no matter what type of vehicle you drive. Even if you have an SUV with four-wheel drive you may not be able to stop any faster, or maintain control any better, once you lose traction. Four-wheel drive may get you going faster, but it won't help you stop sooner.

# Driving safely on icy roads

- **STEERING WHEEL:** Move the steering wheel in a smooth motion, negotiating corners slowly and precisely without jerky movements.
  - Use gentle impulses: accelerate gently, turn slowly, and brake carefully and early.
  - Avoid unexpected quick movements that could put you in a spin by leaving ample room between you and the next car.
- **ANTI-LOCK BRAKES:** If you have anti-lock braking then consistent, firm pressure will help bring you to a stop, as the system gently pulses the brakes, helping retain traction

# Driving safely on icy roads

## **PLAN AHEAD/ LOOK AHEAD:**

- Look ahead at where you want the car to go and not at the obstacle or curb that you are trying to avoid and, with luck, the car will follow your eyes.
- Anticipate turns, stops, and lane changes well before they occur.
- If the snow falls in the city, leave your car at home.
- If you must venture out, plan your route, avoiding hills, and overestimate the time it will take you to get there and then you won't be tempted to put your foot on the gas.

# Driving safely on icy roads

- **TRACTION:** If traction is poor, drive slowly, keeping a good distance behind other vehicles and use the brakes cautiously.
  - Downshift gears and use a gentle pumping action on regular brakes.
- **STEER CLEAR OF BIG TRUCKS.**
  - They are heavier than cars and need considerably longer stopping distances.
  - Their tires also tend to spray snow and rain into parallel lanes, further hindering your visibility.

# Driving safely on icy roads

- **SEE AND BE SEEN.** Always keep your lights on while driving through rain, snow, and fog.
- **FOUR- AND ALL-WHEEL DRIVE:**
  - Don't get overconfident and rely on its abilities to get you out of a problem.
  - The traction and force created by all four wheels driving instead of two helps you get going from a stop, but does not assist your vehicle's braking ability.
  - In fact, AWD- and 4WD-equipped vehicles are heavier than 2WD vehicles and require more time and braking power to come to a stop.



# Driving safely on icy roads

- ***Proceed with Caution!***

- **Speed:** The faster you're going, the longer it will take to stop. When accelerating on snow or ice, take it slow to avoid slipping or sliding. ***Ice and Snow, Take it Slow.***
- **Distance:** Give yourself space. It takes extra time and extra distance to bring your car to a stop on slick and snowy roads. Leave extra room between you and the vehicle in front of you.

# Driving safely on icy roads

- **Brake:** Brake early, brake slowly, brake correctly and never slam on the brakes. If you have anti-lock brakes, press the pedal down firmly and hold it. If you don't have anti-lock brakes, gently pump the pedal. Either way, give yourself plenty of room to stop.
- **Control:** When driving on ice and snow, do not use cruise control and avoid abrupt steering maneuvers. When merging into traffic, take it slow. Sudden movements can cause your vehicle to slide.
- **Vision:** Be aware of what's going on well ahead of you. Actions by other vehicles will alert you to problems more quickly, and give you that split-second of extra time to react safely.



# Winter Automobile Emergency Kit



- **Ice scraper/snowbrush**
- **Shovel**
- **Sand or other traction aid**
- **Tow rope or chain**
- **Booster cables**
- **Road flares or warning lights**
- **Gas line antifreeze**
- **Flashlight and batteries**
- **Properly inflated spare tire, wheel wrench and tripod-type jack**
- **Shovel**
- **Jumper cables**





# Winter Automobile Emergency Kit



- First aid kit
- Fire extinguisher
- Small tool kit
- Candle and a small tin can
- Matches





# Winter Automobile Emergency Kit



- **Tow and tire chains**
- **Bag of salt or cat litter**
- **Compass**
- **Exterior windshield cleaner**
- **Wooden stick matches in a waterproof container**
- **Scissors and string/cord**
- **Extra clothing and footwear**
- **Heavy woolen mittens, socks, a cap and blankets (for trips).**
- **Reflective triangles and brightly-colored cloth**



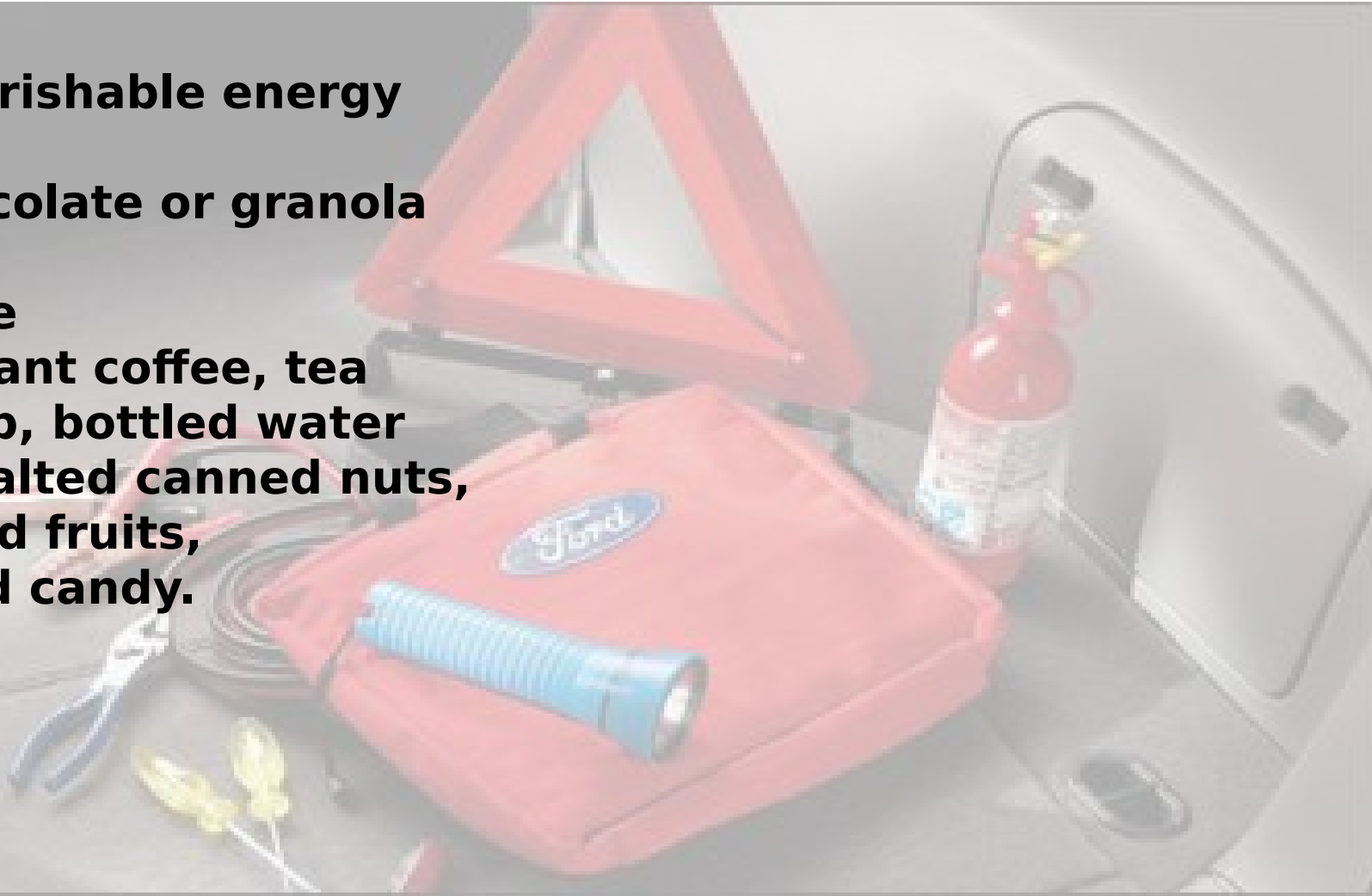


# Winter Automobile Emergency Kit



- **Non-perishable energy foods**

- chocolate or granola bars
- Juice
- instant coffee, tea
- soup, bottled water
- unsalted canned nuts,
- dried fruits,
- hard candy.





# What to do if your tires begin to slide...







# What to do if your tires begin to slide...



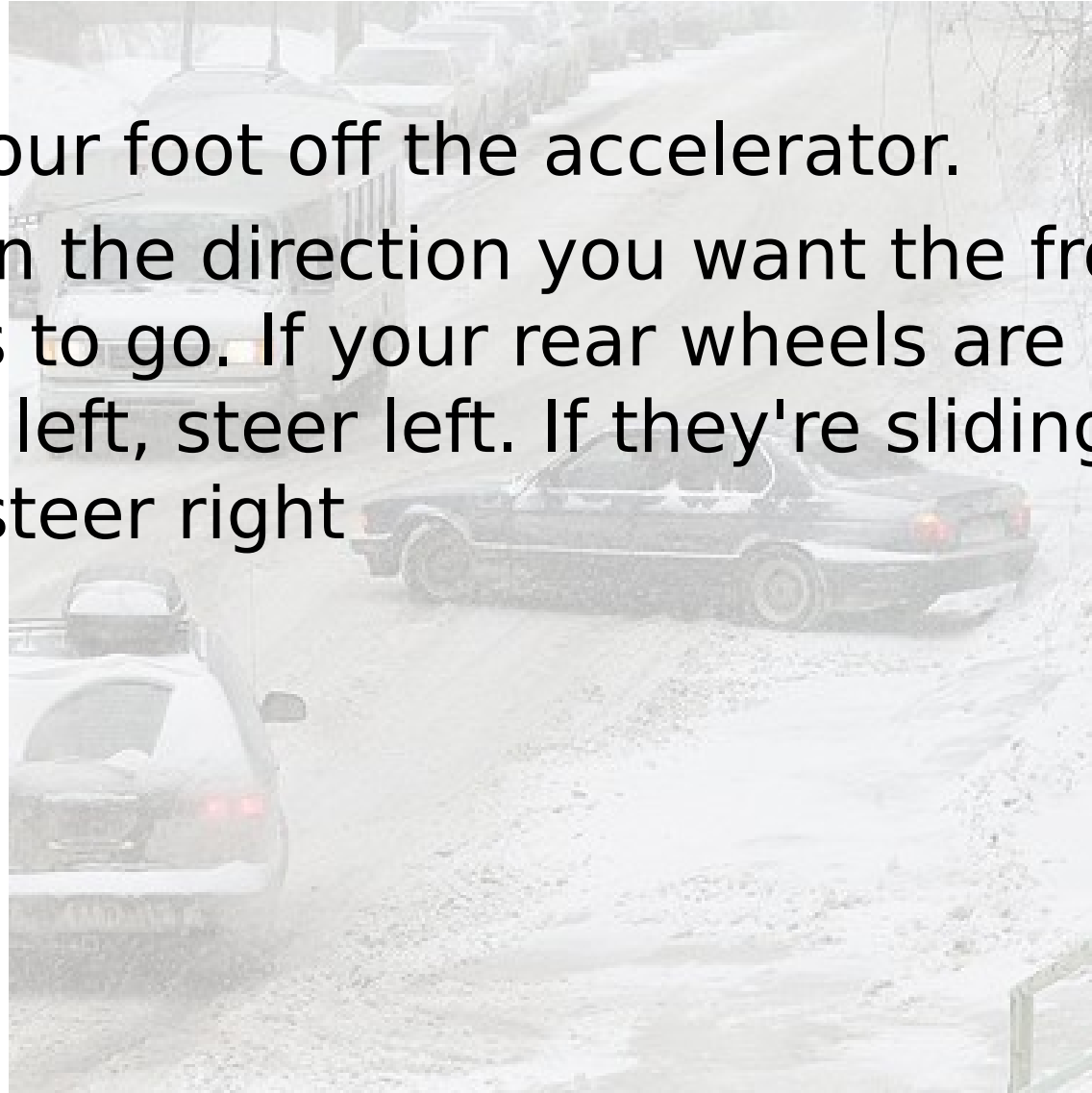
- Steer carefully and avoid overreacting to keep control of the car.
- Cars with antilock brakes systems (ABS), the brakes are automatically pumped for you in a skid situation.
  - You should feel the brake pedal pulsating.
- Car without ABS, apply easy pressure in a pumping motion to the brakes. In the event of an accident, remain calm, follow these safety tips, and call for help.





# If your rear wheels skid...

- Take your foot off the accelerator.
- Steer in the direction you want the front wheels to go. If your rear wheels are sliding left, steer left. If they're sliding right, steer right

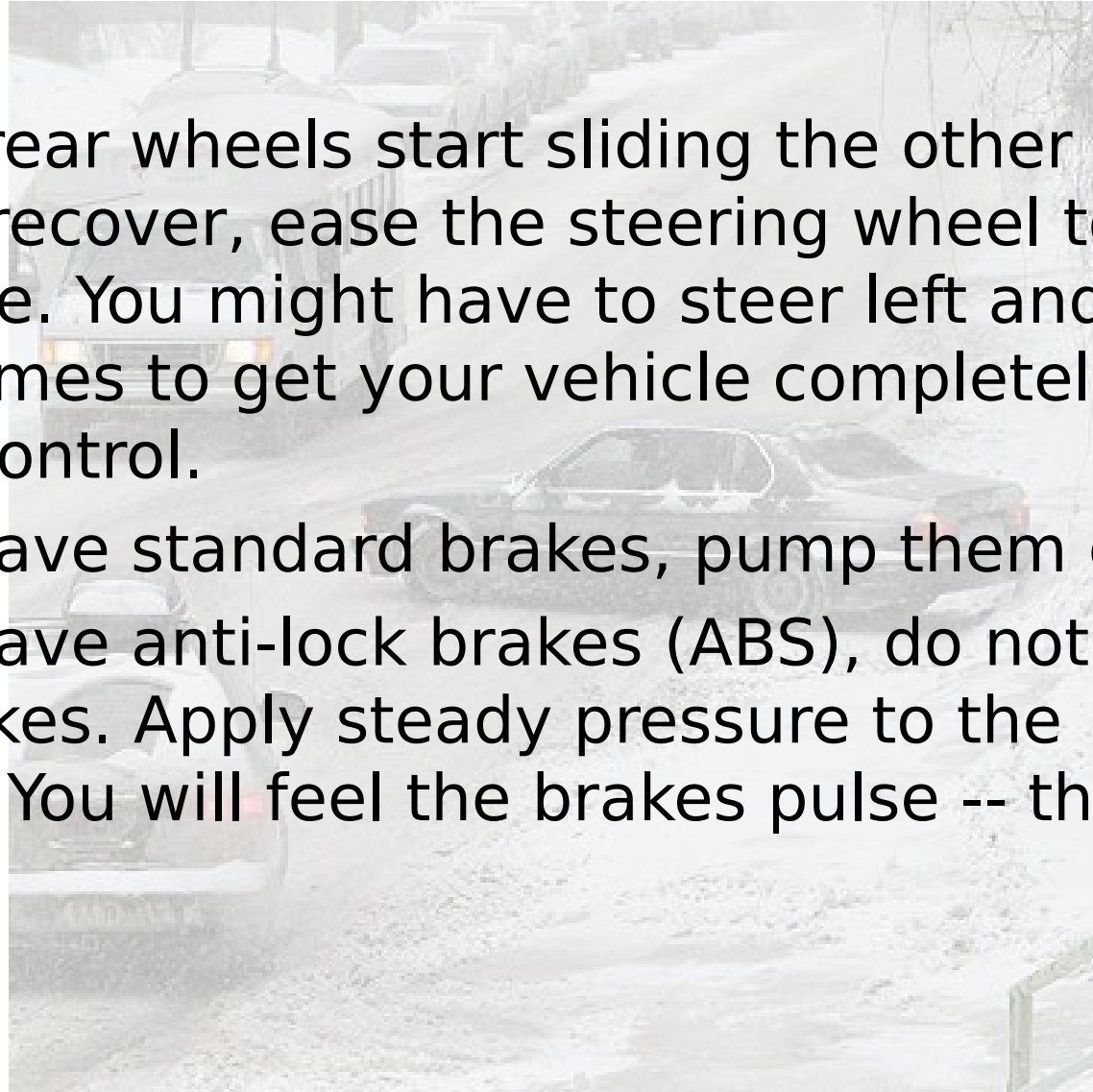




# If your rear wheels skid...



- If your rear wheels start sliding the other way as you recover, ease the steering wheel toward that side. You might have to steer left and right a few times to get your vehicle completely under control.
- If you have standard brakes, pump them gently.
- If you have anti-lock brakes (ABS), do not pump the brakes. Apply steady pressure to the brakes. You will feel the brakes pulse -- this is normal.

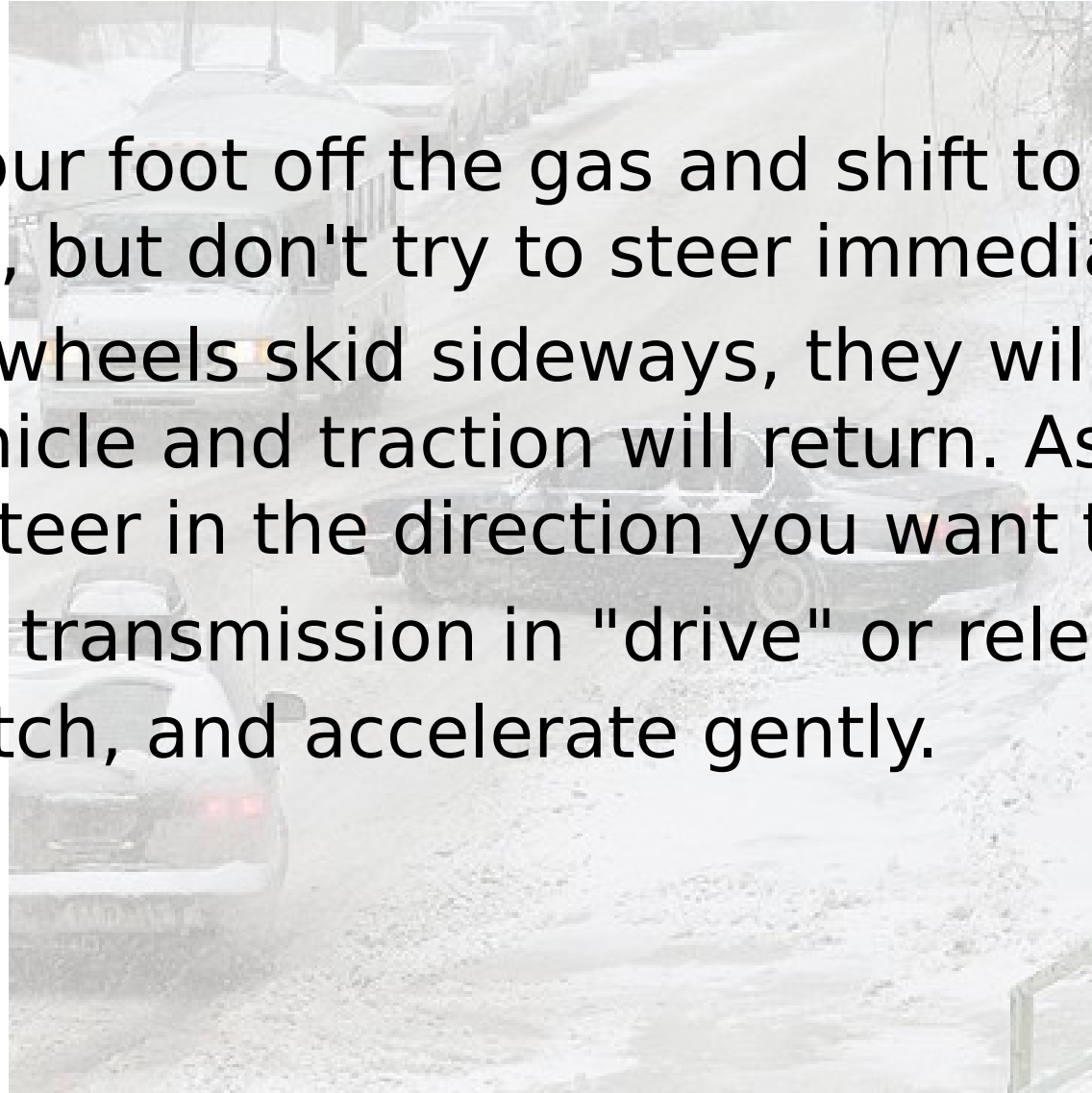




# If your front wheels skid..



- Take your foot off the gas and shift to neutral, but don't try to steer immediately.
- As the wheels skid sideways, they will slow the vehicle and traction will return. As it does, steer in the direction you want to go
- Put the transmission in "drive" or release the clutch, and accelerate gently.





# If you get stuck...



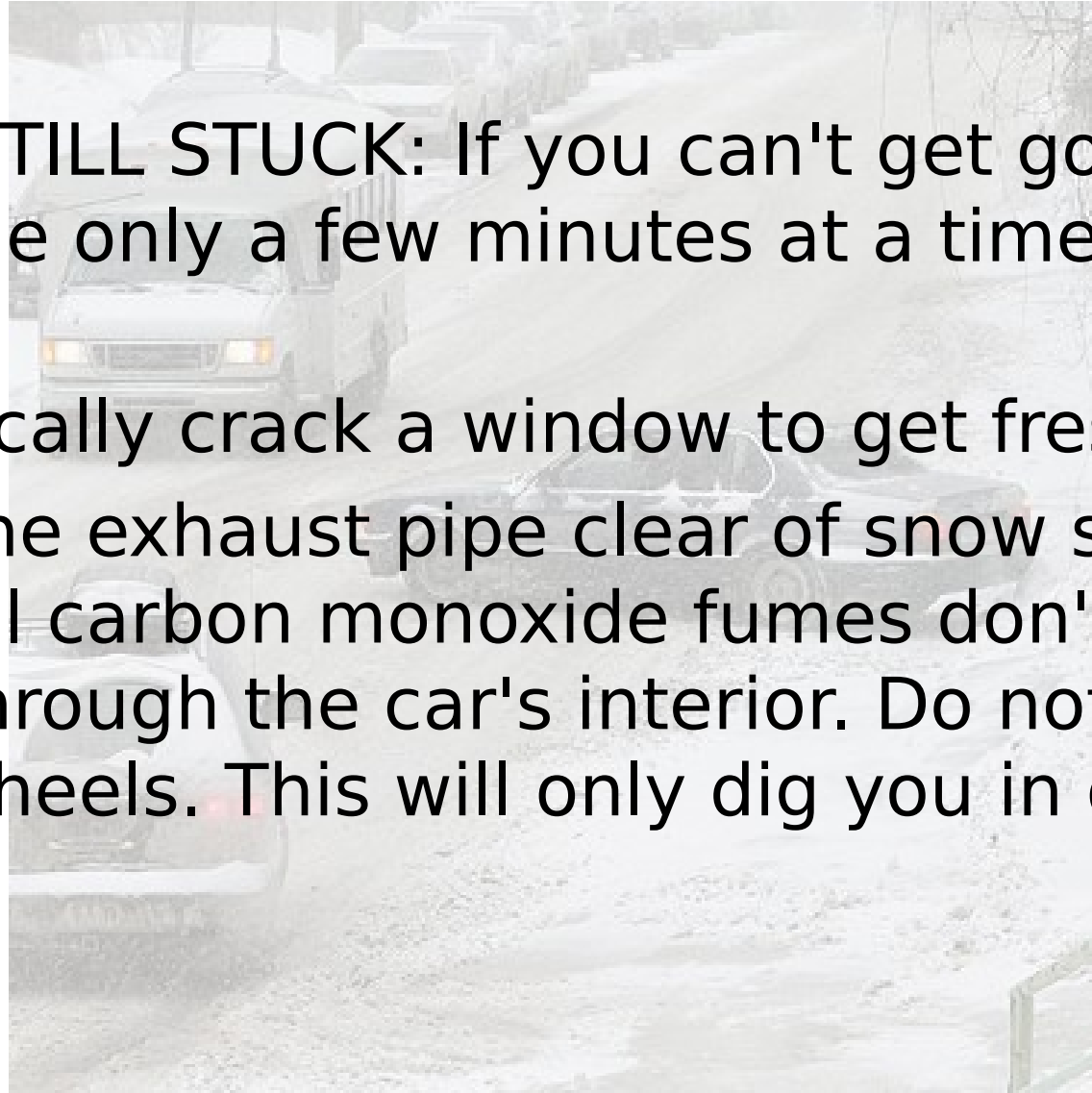
- Straighten the wheels and accelerate slowly.
  - Avoid spinning the tires and digging yourself in deeper.
  - Rock the vehicle back and forth, using its weight and momentum to get unstuck. (Check your owner's manual first -- it can damage the transmission on some vehicles.)
  - Turn your wheels from side to side a few times to push snow out of the way.
  - Use a light touch on the gas, to ease your car out.
  - Use a shovel to clear snow away from the wheels and the underside of the car.
  - Pour sand, kitty litter, gravel or salt in the path of the wheels, to help get traction.
  - Shift from forward to reverse, and back again. Each time you're in gear, give a light touch on the gas until the vehicle gets going.



# If you get stuck...



- **YOU'RE STILL STUCK:** If you can't get going, run the engine only a few minutes at a time to stay warm.
  - Periodically crack a window to get fresh air.
  - Keep the exhaust pipe clear of snow so harmful carbon monoxide fumes don't drift back through the car's interior. Do not spin your wheels. This will only dig you in deeper.





# If You Become Stranded..



- To attract attention, light two flares and place one at each end of the car a safe distance away. Hang a brightly colored cloth from your antenna.
- Keep at least one window open slightly. Heavy snow and ice can seal a car shut.
- Eat some hard candy to keep your mouth moist.



# If You Become Stranded..



- CONSERVE BATTERY:
  - Try to only run the car for 10 minutes per hour,
  - Run the heater only when the car is running.
  - If it is dark, run the dome light only when the car is running.
- CARBON MONOXIDE RISK:
  - Before starting the car, get out and check and make sure the tailpipe is clear.
  - Crack your window a bit when the car is idling.



# In the Event of an Accident







# In the Event of an Accident



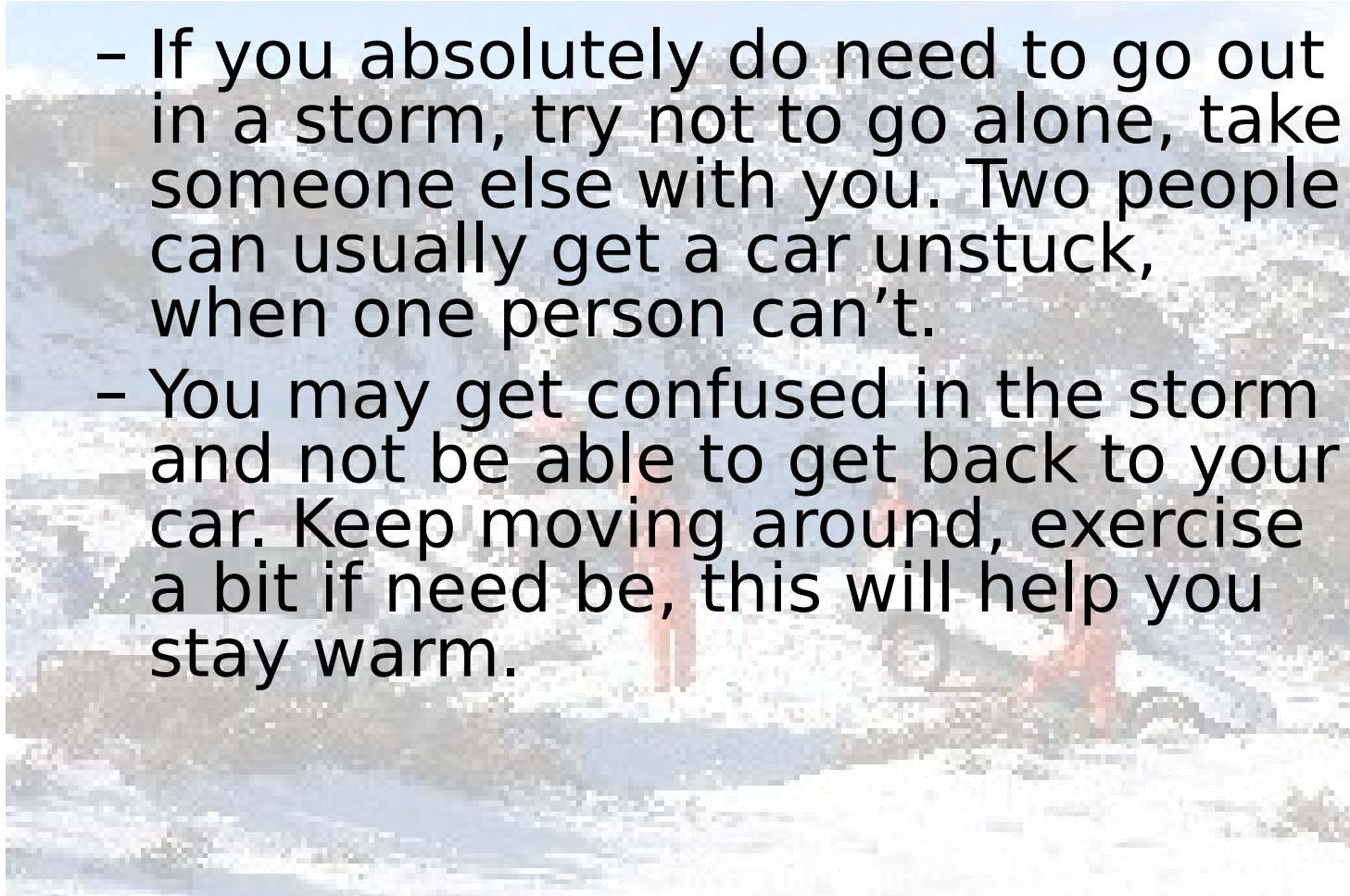
- **GET TO RIGHT SIDE OF ROAD:** Try to get to the right side of the road as far away from traffic as possible.
- **STAY IN YOUR CAR:** Stay in your car with your seatbelt on. Put the hazard lights on so others on the road can see you.
  - Do not leave your car unless you know exactly where you are, how far it is to possible help, and are certain you will improve your situation.



# In the Event of an Accident



- If you absolutely do need to go out in a storm, try not to go alone, take someone else with you. Two people can usually get a car unstuck, when one person can't.
- You may get confused in the storm and not be able to get back to your car. Keep moving around, exercise a bit if need be, this will help you stay warm.

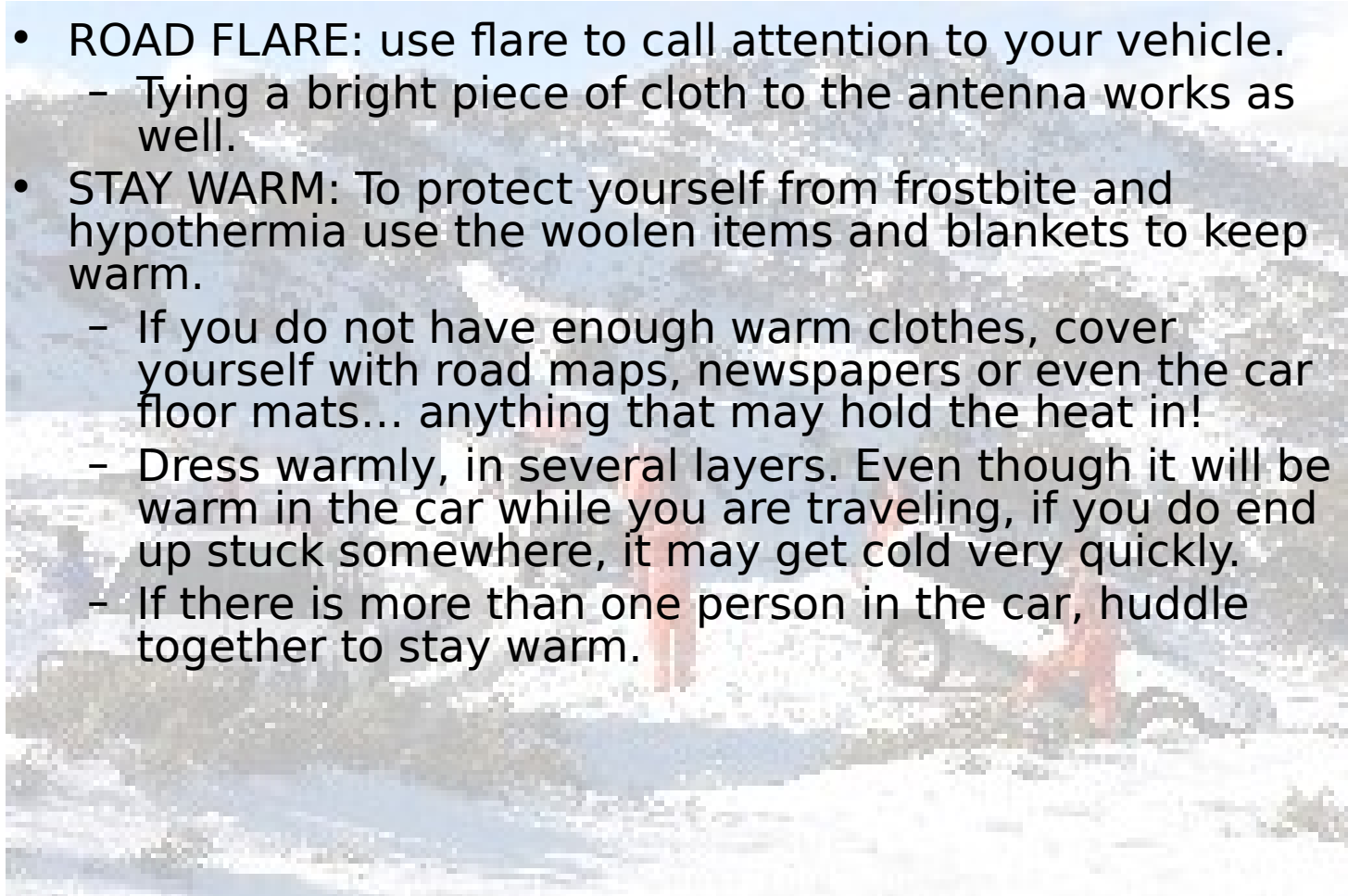




# In the Event of an Accident



- ROAD FLARE: use flare to call attention to your vehicle.
  - Tying a bright piece of cloth to the antenna works as well.
- STAY WARM: To protect yourself from frostbite and hypothermia use the woolen items and blankets to keep warm.
  - If you do not have enough warm clothes, cover yourself with road maps, newspapers or even the car floor mats... anything that may hold the heat in!
  - Dress warmly, in several layers. Even though it will be warm in the car while you are traveling, if you do end up stuck somewhere, it may get cold very quickly.
  - If there is more than one person in the car, huddle together to stay warm.





# In the Event of an Accident



- CELL PHONES:
  - Cell phones and can make a call if they have problems.
  - But don't forget, cell phones don't always have signals.
  - If you do get in touch with someone to come help, it still could take several hours, particularly if the roads are practically impassible.



# Snowplow Safety





# ***Staying Safe Around Snowplows***



- Don't pass snow plows and sanding trucks.
  - The drivers have limited visibility, and you're likely to find the road in front of them worse than the road behind.
- In the winter, snowplow drivers are out on the roads to keep them clear of snow and ice and keep you safe. Here's what you need to know about driving around snowplows:
  - **Distance:** Give snowplows room to work. The plows are wide and can cross the centerline or shoulder. Don't tailgate and try not to pass. If you must pass, take extreme caution and beware of the snow cloud.



# ***Staying Safe Around Snowplows***



- **Speed:** Snowplows travel below the posted speed limit. Be patient. Allow plenty of time to slow down. Remember, ***Ice and Snow, Take it Slow.***
- **Vision:** A snowplow operator's field of vision is restricted. You may see them, but they don't always see you. Keep your distance and watch for sudden stops or turns.



# References



- American Automobile Association (AAA)
- Indiana Dept of Transportation
- *How Stuff Works: Winter Driving* website
- US Army Safety Center
- US Naval Safety Center
- Weather Channel



WATCH  
FOR  
ICE

For any additional  
questions, contact  
your ship Safety Team.

